

IFPUG-September 2004



***DETERMINING THE SIZE OF ERP
IMPLEMENTATION PROJECTS***



Paulo Gurevitz Cunha
EDS - Electronic Data Systems
Data Engineering West,
Denver, CO USA
Communications Industry Solution Center
Don Beckett, CFPS

••• Presentation Objectives

- **The presentation will show how all FP principals apply when counting the size of projects to implement ERPs (Enterprise resource planning software) , like SAP, PeopleSoft, etc ... or any in-house developed or COTS (Commercial Off-The Shelf Software) solution.**
- **The presentation will also show how determining the boundaries of the count is the most complex activity in projects of this type illustrating this with a case study.**
- **Objective IS NOT determining the size of the ERP installed.**

Agenda

- **Presentation objectives/Introduction**
- **Case Study**
- **Determining the boundaries**
- **Identifying the Data Functions**
- **Identifying the Transaction Functions**
- **Estimating and project management considerations**
- **Q&A**



DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS - Introduction

- **Implementing an ERP is like an enhancement project (FP counting type)**
- **Involves adding, changing and deleting functionality**
- **Steps involve determining the boundaries, counting data and transaction functions and calculating unadjusted and adjusted function point sizes, like any other project.**
- **Focus of the presentation on determining the boundaries and identifying data and transaction functions**
- **What is different then?**

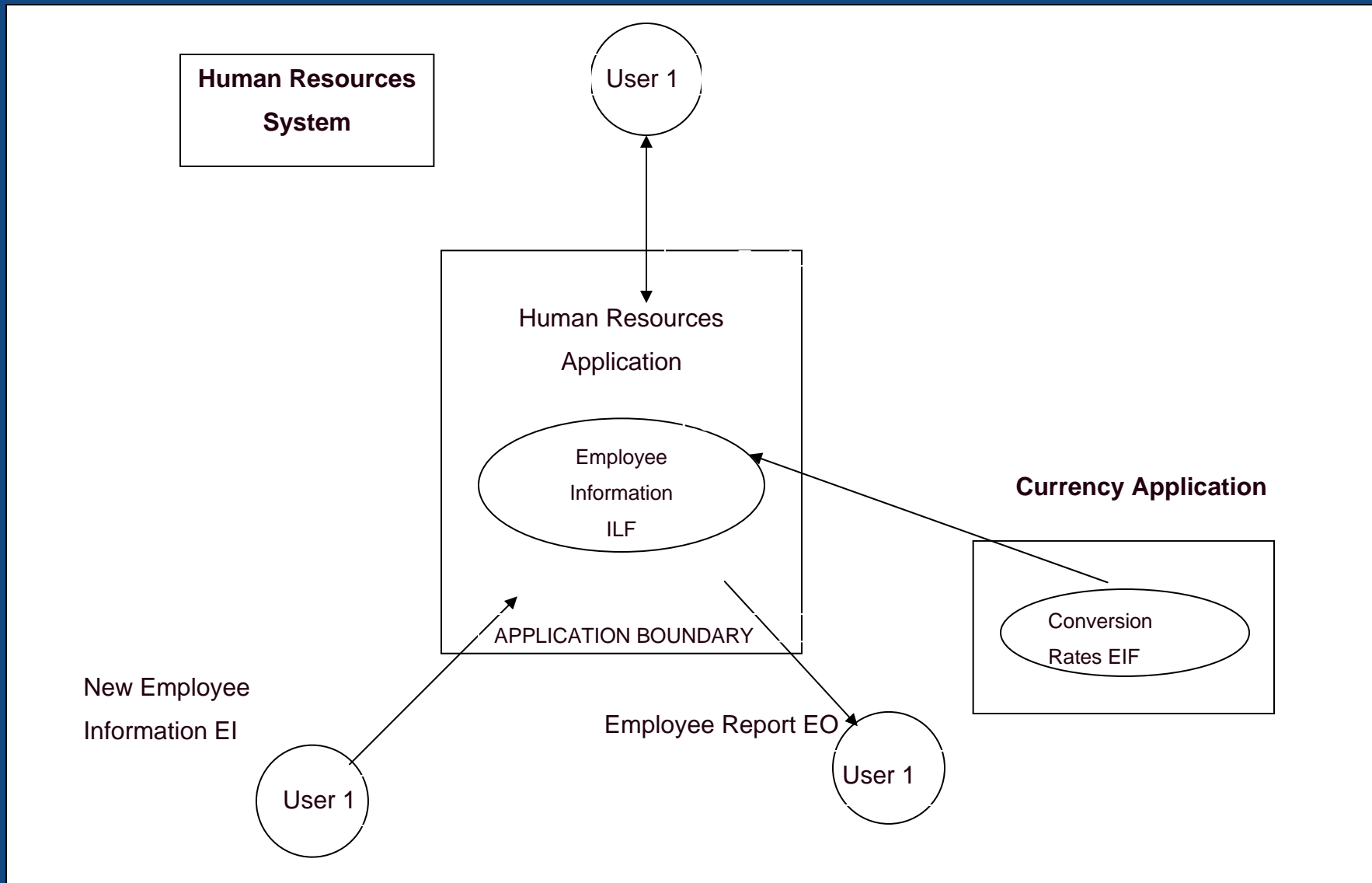


DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Determining the Application Boundaries

- One of the most complex activities in FP analysis
- FPA classes usually don't provide enough emphasis on the complexity of this activity
- Differentiate from Application and Project
- Look at a typical class example:



DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Determining the Application Boundaries





DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Determining the Application Boundaries

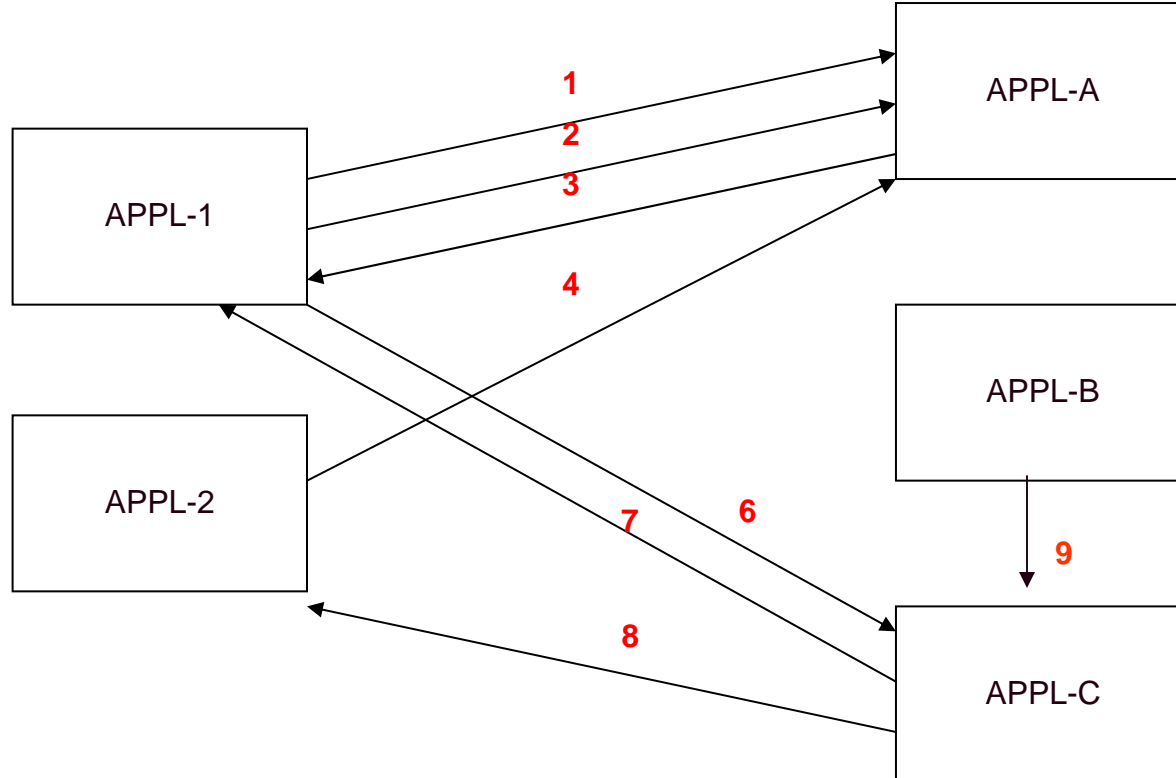
IFPUG CPM 4.2 Definition: The application boundary indicates the border between the software being measured and the user

- It defines what is external to the application
- Is the conceptual interface between the “internal” application and the “external” user
- Acts as a “membrane” through which data processed by transactions (EIs, EOs and EQs) pass into and out from the application
- Encloses the logical data maintained by the application (ILFs)
- Assists in identifying the logical data referenced by but not maintained within this application (EIFs)
- Is dependent on the user’s external business view of the application. It is independent of and/or implementation considerations.



DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Case Study

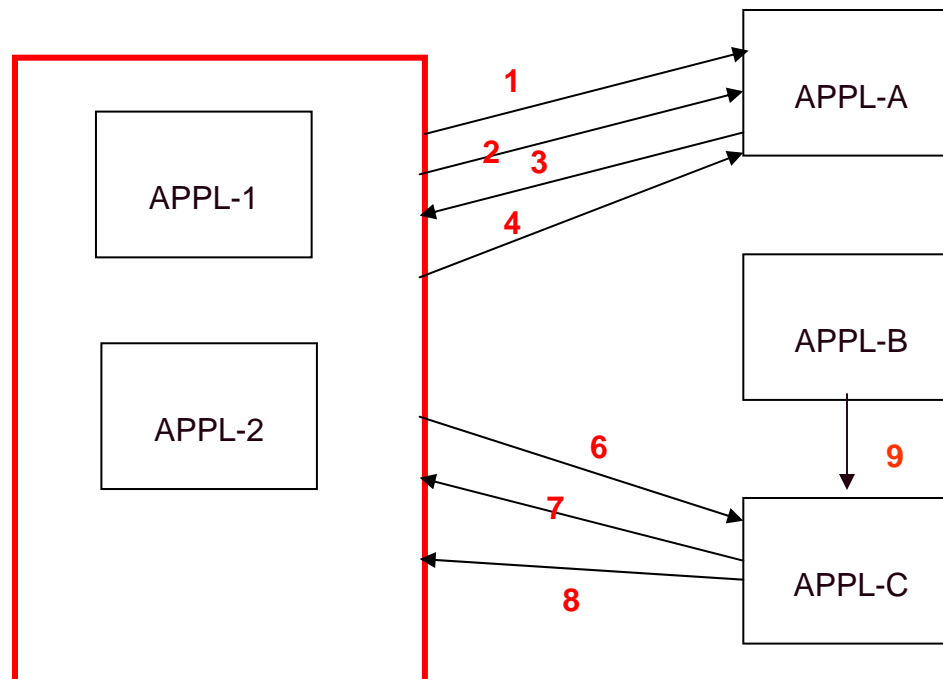
Current Application Architecture, extracted from a very large corporation implementing a global solution package





DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Case Study

In this case the solution adopted is going to replace APPL-1 and APPL-2 as follows:

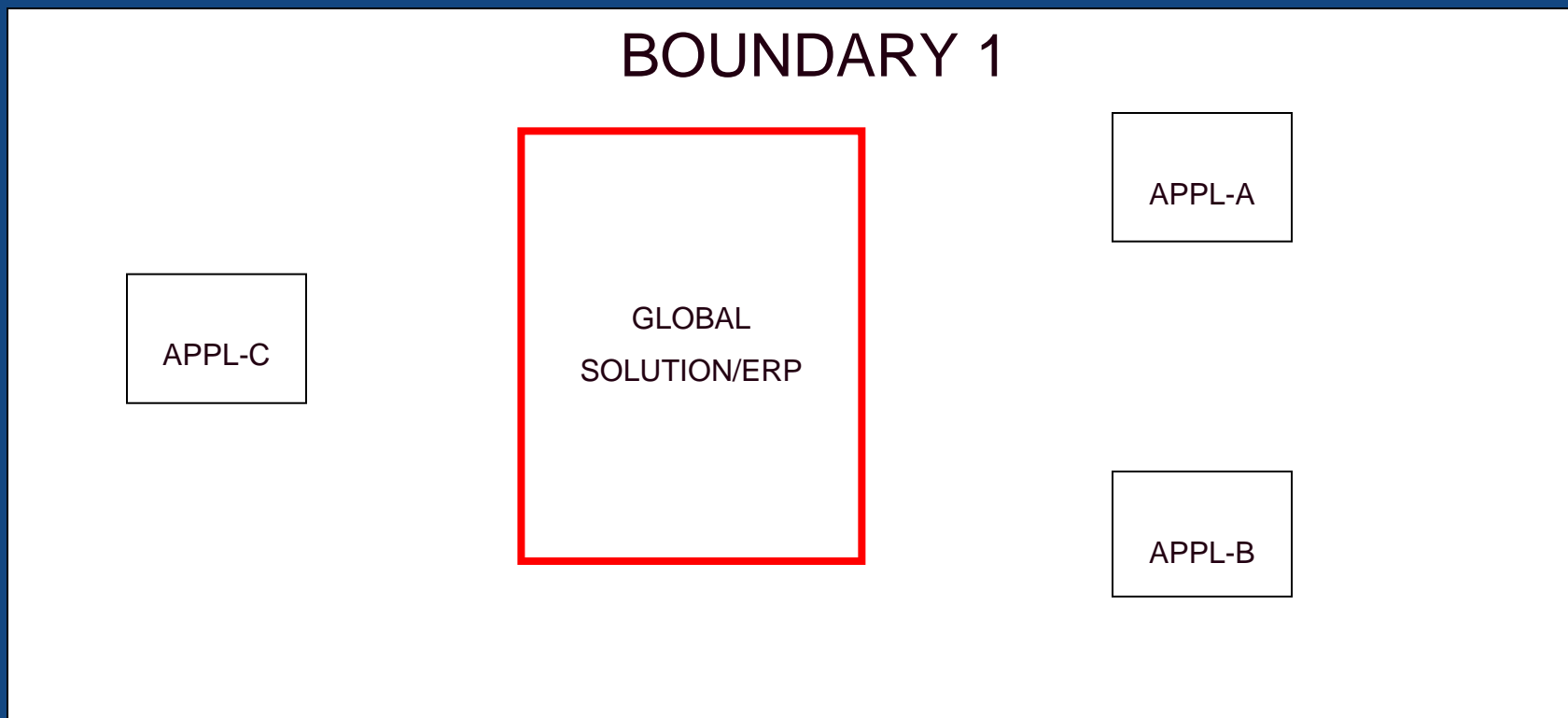




DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Case Study

Identifying the Application Boundaries

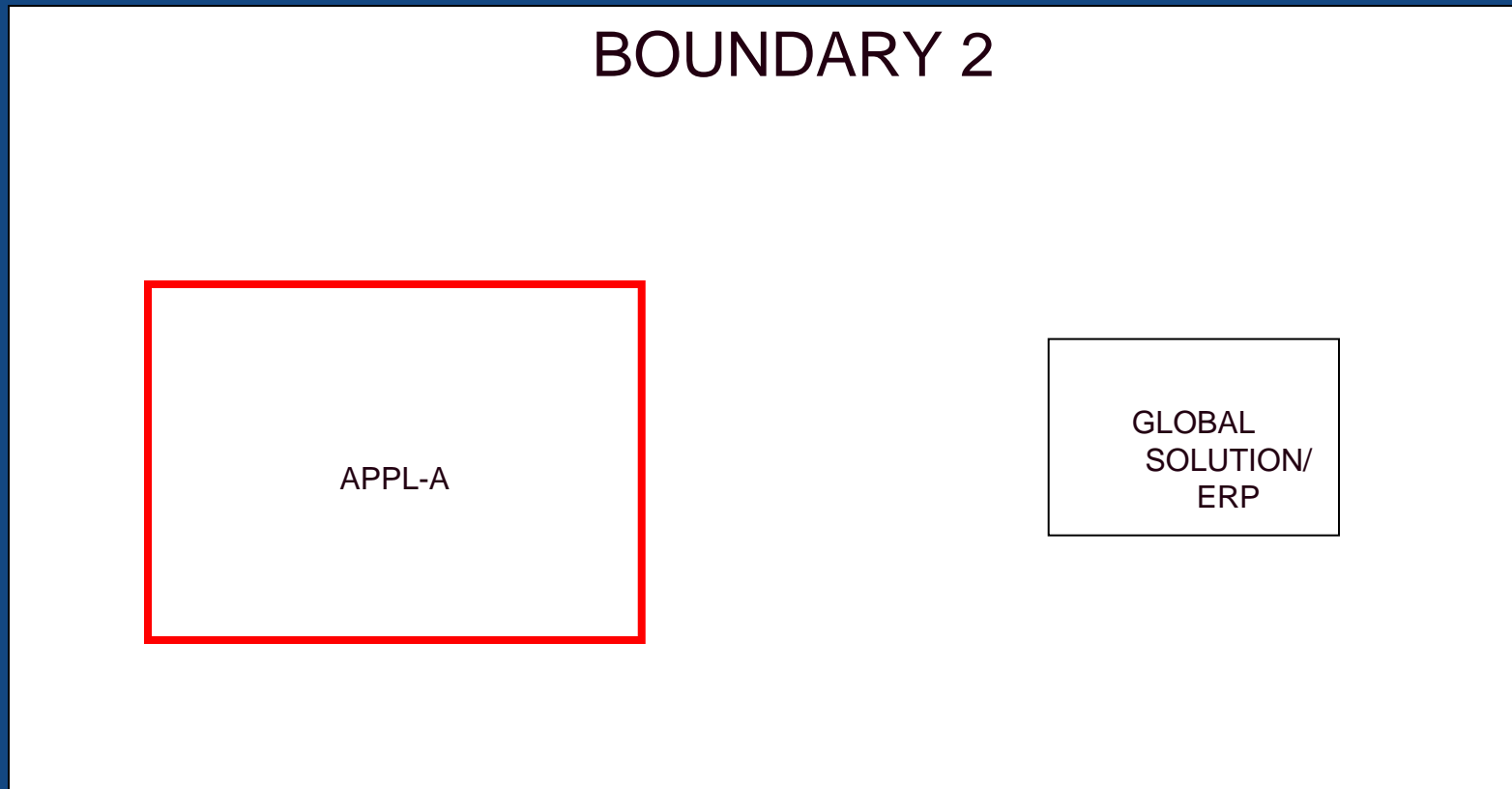
- The project includes decommissioning application APPL-1 and APPL-2 and enhancing the global solution (or ERP) and applications APPL-A, APPL-B and APPL-C
- Four boundaries are identified





DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Case Study

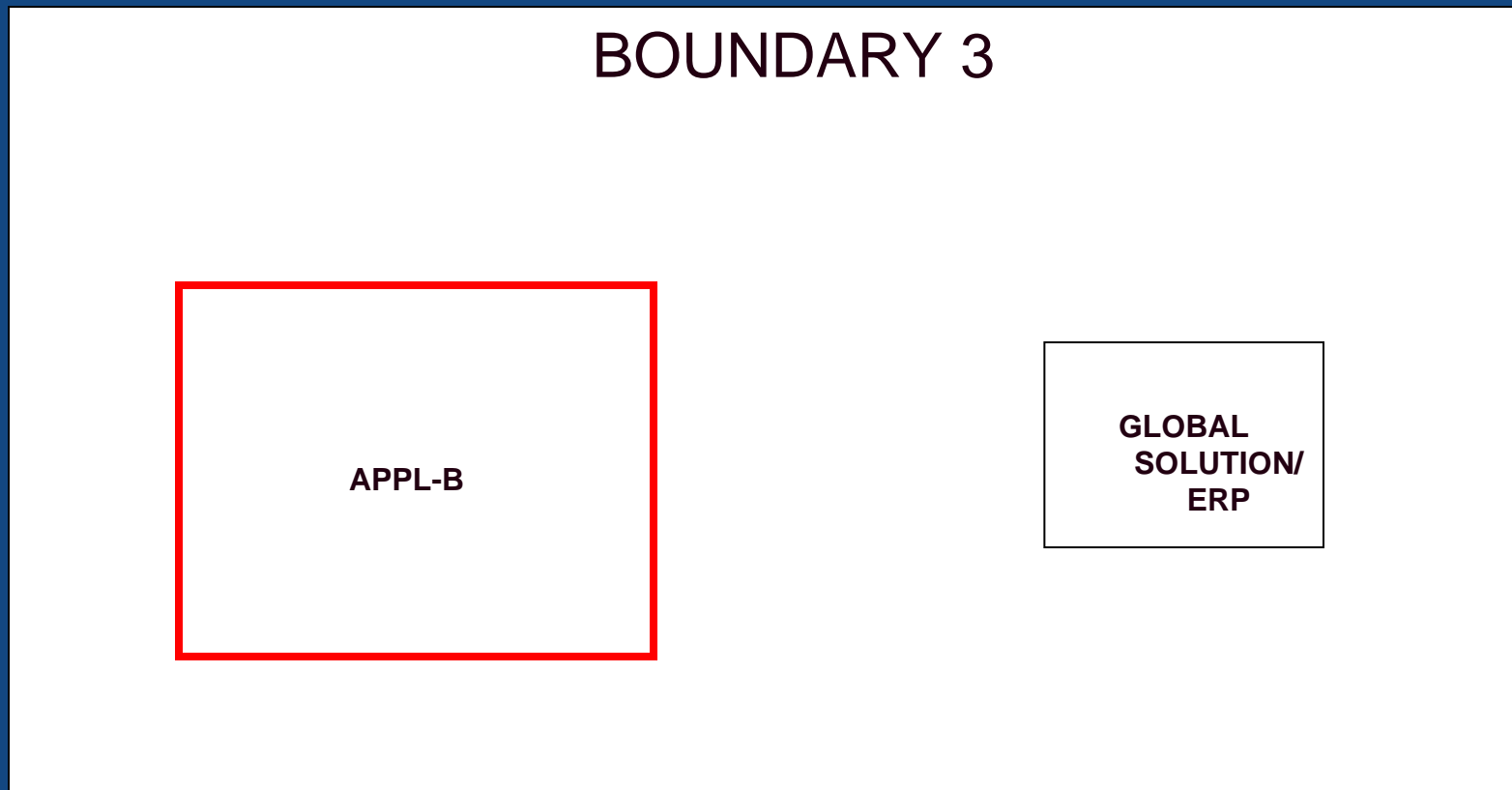
Identifying the Application Boundaries





DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Case Study

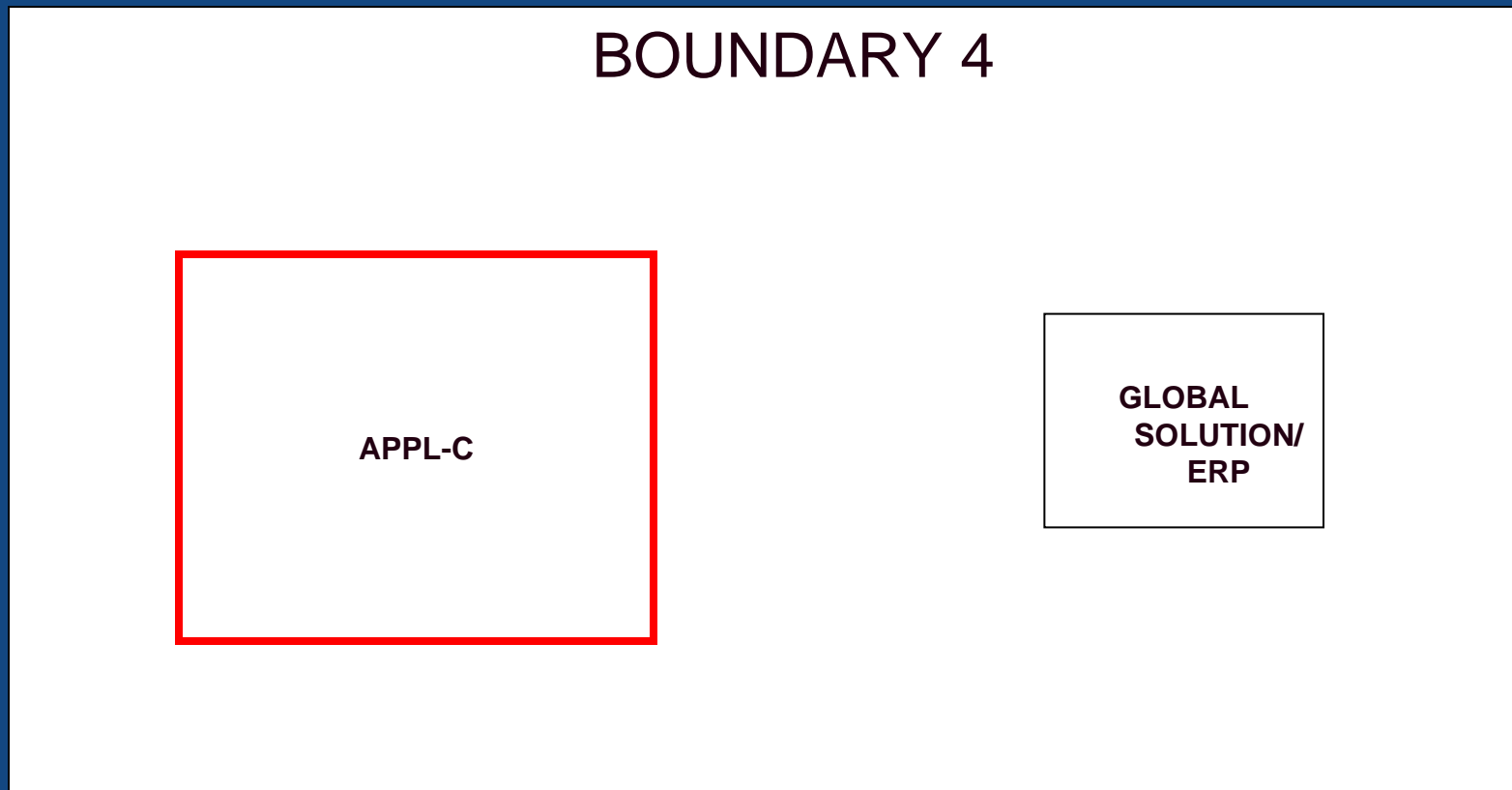
Identifying the Application Boundaries





DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Case Study

Identifying the Application Boundaries





DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Case Study

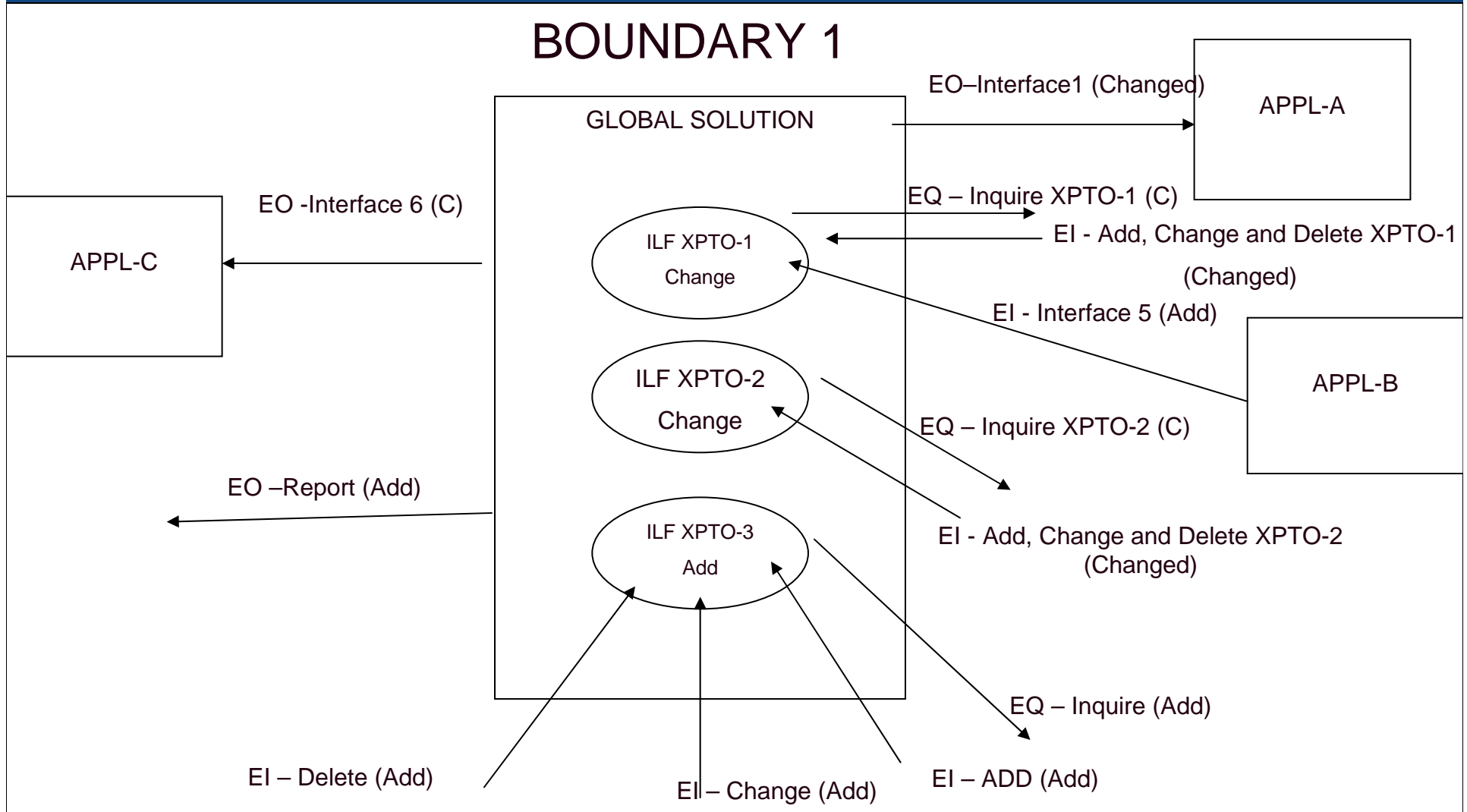
Identifying Functions

- Complete the counting models for each boundary with the identified functions (EIs, EOs, EQs, ILFs and EIFs)
- Based on business requirements identified on scope statement
- For the Global Solution boundary we have:
 - Change interfaces 1 and 6 (External Outputs – EO)
 - Receive interface 5 (External Input – EI, that updates the ILF XPTO-1)
 - Produce a new report (External Output – EO)
 - Modify two existing ILFs (XPTO-1 and XPTO-2) and corresponding functions to update it and inquire from it.
 - Add a new ILF (XPTO-3) and corresponding functions to update it and inquire from it.



DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Case Study

Identifying Functions





DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Case Study

- Summary of the count to adapt the Global Solution/ERP:

<i>Function</i>	<i>Function Type</i>	<i>Operation (Added, Changed or Deleted)</i>
1. Interface 1	EO	C
2. Interface 6	EO	C
3. Interface 5	EI	A
4. Report	EO	A
5. ADD XPTO-3	EI	A
6. Change XPTO-3	EI	A
7. Delete XPTO-3	EI	A
8. Inquire XPTO-3	EQ	A
9. XPTO-1	ILF	C
10. XPTO-2	ILF	C
11. XPTO-3	ILF	A
12. ADD XPTO-1	EI	C
13. Change XPTO-1	EI	C
14. Delete XPTO-1	EI	C
15. Inquire XPTO-1	EQ	C
16. ADD XPTO-2	EI	C
17. Change XPTO-2	EI	C
18. Delete XPTO-2	EI	C
19. Inquire XPTO-2	EQ	C



DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Case Study

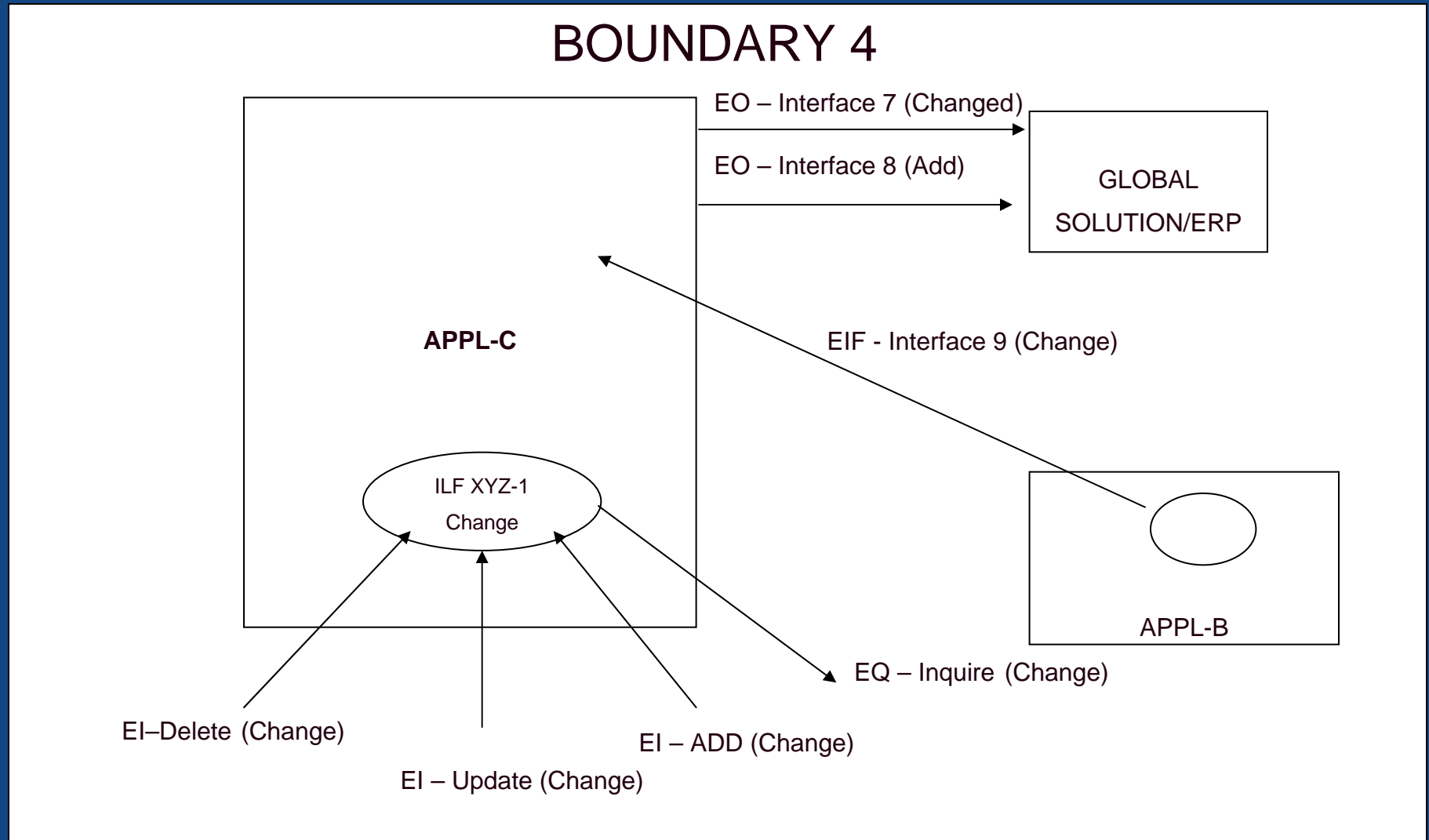
Identifying Functions

- **For the APPL-C boundary we have to:**
 - **Change Interface 7 (External Output – EO) to a new format compatible with the ERP.**
 - **Produce a new Interface 8 (External Output – EO)**
 - **Change an ILF (XYZ-1) and corresponding updating and inquire functions.**
 - **Change the reception of a file (External Interface File – EIF) that is sent from APPL_B and is also changed as part of this project (Interface 9).**



DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Case Study

Identifying Functions





DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS – Case Study

Summary of the count to adapt the APPL-C:

<i>Function</i>	<i>Function Type</i>	<i>Operation (Added, Changed or Deleted)</i>
1. Interface 7	EO	C
2. Interface 8	EO	A
3. ADD XYZ-1	EI	C
4. Change XYZ-1	EI	C
5. Delete XYZ-1	EI	C
6. Inquire XYZ-1	EQ	C
7. Interface 9	EIF	C
8. XYZ-1	ILF	C



DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS

Next Steps

- **Determine functions complexities**
- **Calculate unadjusted function point size**
- **Calculate Adjusted FP sizes**
- **Estimate the project's size in FP**
- **Estimate Decommissioning of existing applications**
- **Calculate FP size of installed applications**



DETERMINING THE SIZE OF ERP IMPLEMENTATION PROJECTS

Estimating and project management considerations

- **Determine project management strategy**
 - **Number of projects**
 - **Platforms**
 - **Subcontracting vs Internal development groups**
 - **Project constraints (duration, effort (\$), resources)**
 - **...**
- **Add up FP sizes that belong to the same project**
- **Consider percentages of sizes on different platforms and projects**
- **ERP Installation and customizing (not measurable in FP)**
- **Data conversion (also measured in FP)**

Contact:

pcunha@eds.com

(303) 305-1775

dmbekett@msn.com

(360) 779-2734